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U.S. DEPARTMENT OF AGRICULTURE

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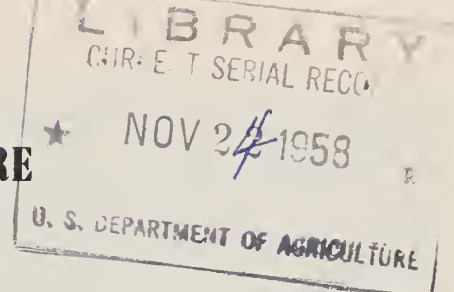


PHOTO SERIES NO. 17

STORING CORN FOR THE LONG HAUL

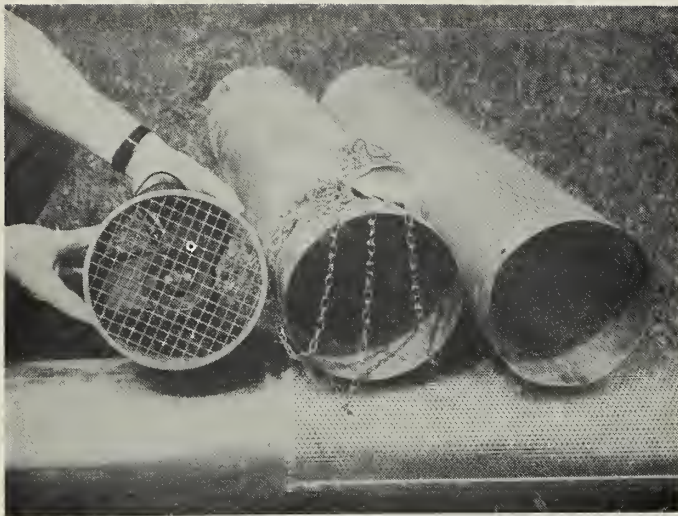
SEPTEMBER 1958

How to store corn for as long as five years was a matter of only academic interest until the Department of Agriculture, through the Commodity Credit Corporation, became the owner of hundreds of millions of bushels of corn, some of which had to be held in storage for several years. To protect its investment, CCC asked Agricultural Marketing Service to conduct research into temperatures, moisture, insects, diseases and other factors affecting keeping qualities of corn. The research project is centered at Watseka, Illinois, with 210 bins, each holding 3,000 bushels of shelled corn. Pictures were taken for USDA's Agricultural Marketing Service.



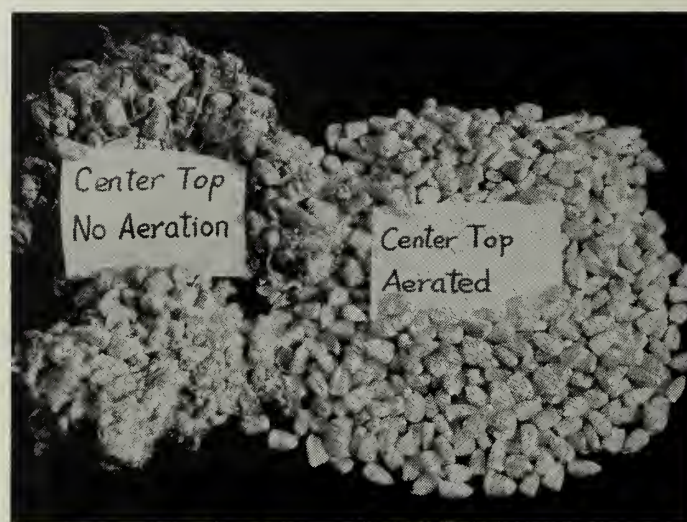
N-25762--At the corn storage research project, near Watseka, Illinois, 210 metal bins filled with 3,000 bushels each of shelled corn are used to study long-term storage problems. Most of the bins are divided into groups to study temperatures, chemical treatments, insects, moisture, etc.

Magazines and newspapers may obtain glossy prints of any of these photographs from the Photography Division, Office of Information, U. S. Department of Agriculture, Washington 25, D. C. Others may purchase prints (8 x 10) at \$1.00 each from the same address.



N-25763--A satisfactory way of moving air through grain in a bin is by means of a vertical duct with a small electric fan at the top. The fan pulls air down through the grain into perforated sections of the duct, and exhausts it through the top. A motor of 1/80 horsepower operates the fan.

N-25768--These two samples of corn came from adjoining bins. In one, there was no flow of air through the grain; moisture accumulated near the center at the top of the bin, and mold developed in the grain. In the other bin, a fan and duct system aerated the grain, and no mold damage appeared.



N-25769--Moldy corn on top of a bin that had no aeration. The corn averaged 14 percent moisture. Moisture migrated to top and center and caused damage.



N-25766--Temperature of the corn in 210 bins is taken at regular intervals using this temperature meter and thermocouples. The operator reads the temperatures, one after another for a number of positions in each bin. This reading is 42 degrees, in the bottom, center of the bin.



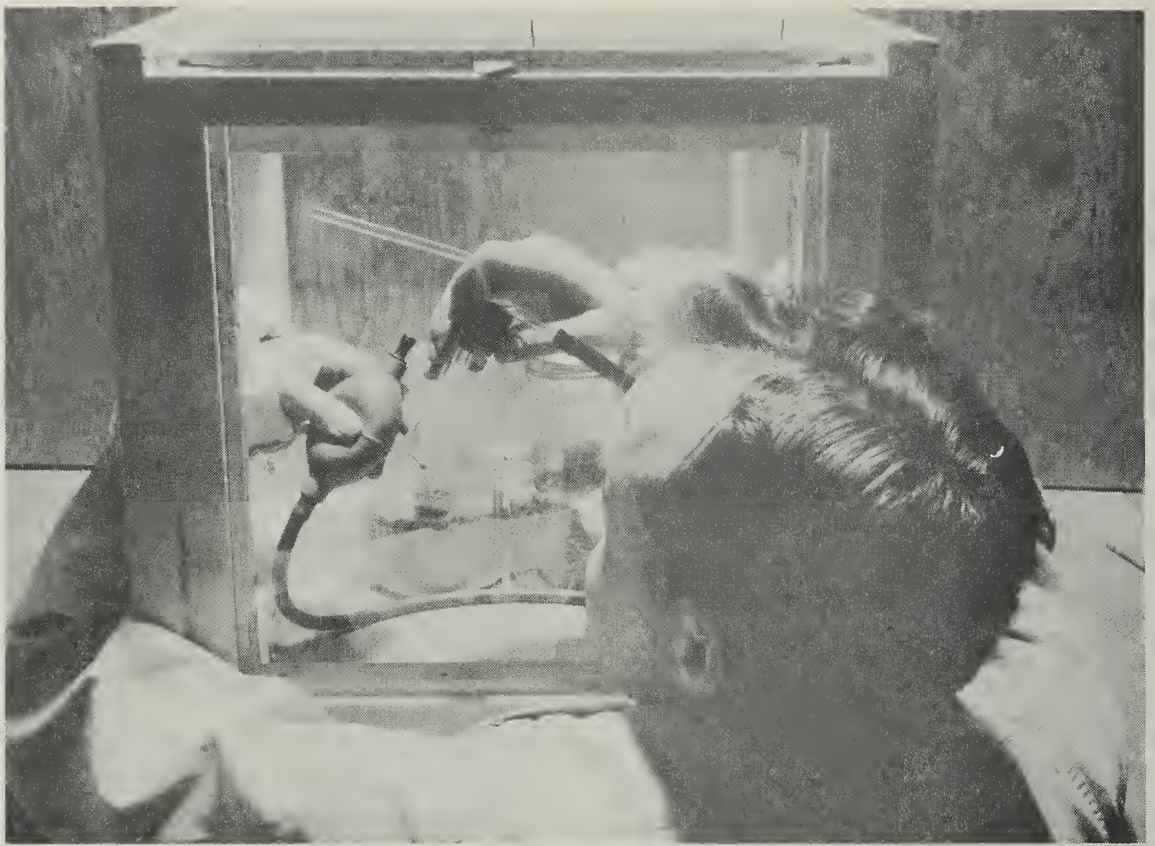
N-25764--The temperature at the top of the corn in the same bin registered 66 degrees, 24 degrees warmer than at the bottom. If mold or insect damage should appear at any time, temperature might be identified as one of the causes.



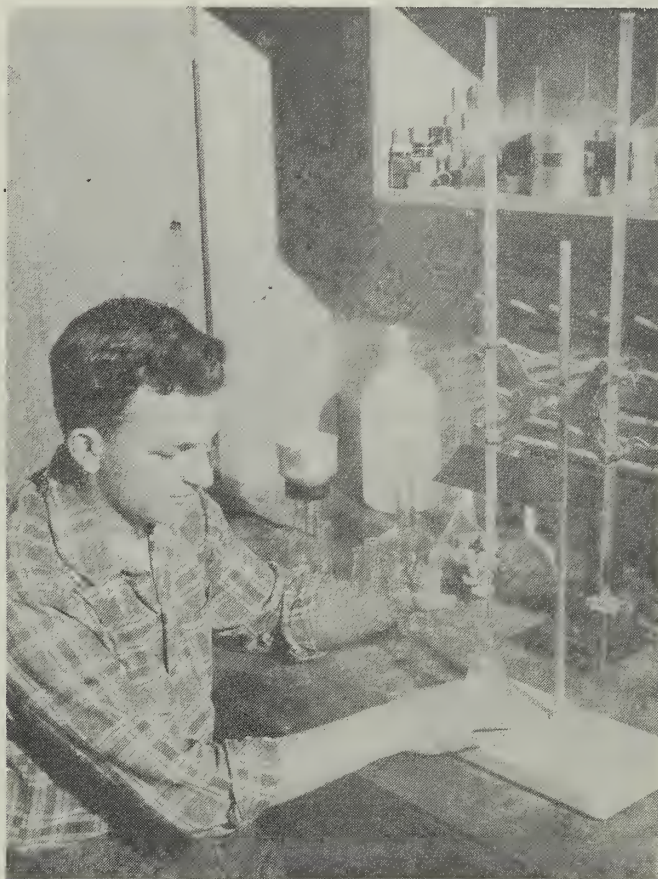
N-25770--The first step in testing corn to determine its content of fatty acids. A sample of corn is ground in this electric grinder and weighed. The vacuum pump at the lower right speeds the action of chemical solvent which extracts the fatty acid.



N-25767--This is a time switch, used to turn fans on and off at certain hours. Some of the studies of corn storage are aimed at finding out what happens when grain has air drawn through it at different times of day.



N-25773--How to catch a moth. Project entomologist James Quinlan rears grain insects of several kinds, in glass jars containing bran or corn meal, and "plants" them in certain bins to insure infestation. The bulb in his left hand is used to suck the moth through the glass tube into the bottle in his right hand.



N-25771--Here, a technician measures the amount of fatty acid that has been extracted from a sample of corn. It is believed the development of fatty acid in corn may be a warning that the grain is going out of condition.